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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,461	10/22/2003	Toshihiro Suzuki	1324.68565	7326
24978 7590 05/18/2007 GREER, BURNS & CRAIN 300 S WACKER DR 25TH FLOOR CHICAGO, IL 60606			EXAMINER BODDIE, WILLIAM	
			ART UNIT 2629	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/691,461	Applicant(s) SUZUKI ET AL.	
	Examiner William L. Boddie	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-10 and 12-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-10 and 12-18 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In an amendment dated, February 6th, 2007, the Applicant amended claims 3-4, 7-8, 12, 17, added new claim 18 and cancelled claim 11. Currently claims 3-10 and 12-18 are pending.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 6th, 2007 has been entered.

Response to Arguments

3. Applicant's arguments with respect to claims 3-10 and 12-18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

4. Claim 8 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically, claim 8 requires a couple of light guide plates. This limitation is in direct contrast to the independent claim from which claim 8 depends. Claim 3's limitations require a single

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light guide plate with various properties. These new claim 8 limitations, as such, do not further limit claim 3.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 3-10 and 12-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner was only able to locate discussion and embodiments which comprised evenly formed fine irregularities on a curved light reflecting surface. No embodiments were discussed where the light reflecting surface was planar and comprised fine irregularities evenly formed on the planar light reflecting surface.

8. Claim 8 recites the limitation "the light guide plates" in line 8 of claim 8. There is insufficient antecedent basis for this limitation in the claim. Specifically, claim 3, from which claim 8 depends, only discusses a single light guide plate, not plural.

9. Claim 18 recites the limitation "the planar or curved light reflecting surface" in line 2 of page 7 of the claims. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

10. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Nakabayashi et al. (US 6,379,017).

With respect to claim 18, Nakabayashi discloses, a light source device (fig. 23c) comprising:

first and second light sources which emit light (212 and 211 in fig. 23c); and
a light guide plate having a planar light exit surface (321, 322 in fig. 23c), a light reflecting surface opposite said light exit surface (311, 312 in fig. 23c),

a first light-emitting region (322 in fig. 23c) which is provided in an area other than the neighborhood of the first light source (clear from fig. 23c) and which has a first lighting element (right sided prisms) provided on said light reflecting surface for taking out, through said light exit surface, light guided from the side of the first light source, and

a second light-emitting region (321 in fig. 23c) which is provided in an area other than the neighborhood of the second light source (clear from fig. 23c) and which has a second lighting element (left sided prisms in fig. 23c) provided on said light reflecting surface for taking out, through said light exit surface, light guided from the side of the second light source (col. 22, lines 21-37);

wherein the first and second lighting elements include a light-scattering layer (204 in fig. 23c) formed on the planar or curved light reflecting surface (curved; see fig.

23c; also note Nakabayashi's characterization of the surface as "generally wedge shaped" which is equivalent to the Applicants' own description of a curved surface as "wedge-like" para. 74) of the light guide plate.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3-7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakabayashi et al. (US 6,379,017) in view of Osakada et al. (US 5,521,796).

With respect to claim 3, Nakabayashi discloses, a light source device comprising:

first (212 in fig. 23c) and second (211 in fig. 23c) light sources which emit light;
and

a light guide plate having a planar light exit surface (321-322 in fig. 23c), a planar or curved (curved surface of fig. 23c; also note that the grooves (204) are extremely shallow ~5m deep; col. 19, line 13) light reflecting surface opposite said light exit surface (311-312 in fig. 23c), a first light-emitting region (322 in fig. 23c) which is provided in an area other than the neighborhood of the first light source and which has a first lighting element (204 in fig. 23c) provided on said light reflecting surface (312 in fig. 23c) for taking out, through said light exit surface (322 in fig. 23c), light guided from the side of the first light source, and a second light-emitting region (321 in fig. 23c) which is

provided in an area other than the neighborhood of the second light source and which has a second lighting element (204 in fig. 23c) provided on said light reflecting surface (311 in fig. 23c) for taking out, through said light exit surface (321 in fig. 23c), light guided from the side of the second light source (col. 22, lines 21-37; discloses, that the top plate 311-312 reflects the light to be output at the bottom faces 321-322);

Nakabayashi does not expressly disclose wherein the first and second light elements comprises fine irregularities evenly formed on the planar or curved light reflecting surface of the light guide plate.

Osakada discloses, a light guide plate (fig. 4) wherein a light element (41 in fig. 4) comprises fine irregularities (14 in fig. 1) evenly formed (col. 4, lines 15-27) on a planar light-reflecting surface (1 in fig. 1) of a light guide plate (fig. 4).

Osakada and Nakabayashi are analogous art because they are both from the same field of endeavor namely, design of light guide plates.

At the time of the invention it would have been obvious to one of ordinary skill in the art to augment the prism-like elements of Nakabayashi with the fine irregularity light scattering elements of Osakada.

The motivation for doing so would have been to scatter transmitting light to the light-emitting surface side with good efficiency (Osakada; col. 4, lines 23-26).

With respect to claim 4, Nakabayashi and Osakada disclose, a light source device according to claim 3 (see above).

Nakabayashi further discloses, wherein the light guide plate has light-reflecting elements (2 in fig. 23c; col. 22, line 36) for reflecting light on end faces thereof which are opposite to the first and second light sources, respectively.

With respect to claim 5, Nakabayashi and Osakada disclose, a light source device according to claim 3 (see above).

Nakabayashi further discloses, wherein each of the first and second light sources is a plurality of point light sources (col. 22, lines 32-34) which are provided side by side (col. 35, lines 24-26).

With respect to claim 6, Nakabayashi and Osakada disclose, a light source device according to claim 3 (see above).

Nakabayashi further discloses, wherein the first light source is provided near the second light-emitting region and wherein the second light source is provided near the first light-emitting region (clear from fig. 23c).

With respect to claim 7, Nakabayashi and Osakada disclose, a light source device according to claim 3 (see above).

Nakabayashi further discloses, a first light guide region (left 203 in fig. 23c) for guiding light from the side of the first light source (212 in fig. 23c) to the first light-emitting region (322 in fig. 23c); and

a second light guide region (right 203 in fig. 23c) for guiding light from the side of the second light source (211 in fig. 23c) to the second light-emitting region (321 in fig. 23c);

wherein the first and second light guide regions are provided in the single light guide plate (clear from fig. 23c that the light guide plate is a single plate).

13. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakabayashi et al. (US 6,379,017) in view of Osakada et al. (US 5,521,796) in view of Lin (US 2003/0184990).

With respect to claim 8, Nakabayashi and Osakada disclose, a light source device according to claim 3 (see above).

Nakabayashi further discloses, a first light guide region (left 203 in fig. 23c) for guiding light from the side of the first light source (212 in fig. 23c) to the first light-emitting region (322 in fig. 23c); and

a second light guide region (right 203 in fig. 23c) for guiding light from the side of the second light source (211 in fig. 23c) to the second light-emitting region (321 in fig. 23c).

Neither Osakada nor Nakabayashi expressly disclose, stacking a couple of light guide plates one on the other.

Lin discloses, stacking light guide plates on one another (figs. 2 and 3).

Nakabayashi, Osakada and Lin are analogous art because they are from the same field of endeavor namely, light source devices for display panels.

At the time of the invention it would have been obvious to one of ordinary skill in the art to stack two of Nakabayashi and Osakada's light guide plates as taught by Lin.

The motivation for doing so would have been increased reliability (Lin; para. 20).

14. Claims 9 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakabayashi et al. (US 6,379,017) in view of Osakada et al. (US 5,521,796) in view of Miura et al. (US 6,693,619).

With respect to claim 9, Nakabayashi and Osakada disclose, a light source device according to claim 3 (see above).

Neither Osakada nor Nakabayashi expressly disclose, at what frequencies the light sources are energized.

Miura discloses, a light source driving circuit (12, 15 in fig. 6) for causing first (107 in fig. 7) and second (108 in fig. 7) light sources to emit light at a predetermined flashing frequency at predetermined timing which is different between the light sources (fig. 8; col. 4, lines 49-67).

Nakabayashi, Osakada and Miura are analogous art because they are from the same field of endeavor namely, light source devices for display panels.

At the time of the invention it would have been obvious to one of ordinary skill in the art to drive the light sources of Nakabayashi and Osakada with the different frequencies that are taught by Miura.

The motivation for doing so would have been to eliminate trailing (Miura; col. 5, lines 10-12).

With respect to claim 13, Nakabayashi and Osakada disclose, a light source device according to claim 3 (see above).

Nakabayashi further discloses, the use in liquid crystal displays (col. 1, lines 7-11).

Neither Nakabayashi nor Osakada expressly disclose, a display.

Miura discloses, a display panel having a display area including a plurality of pixels (4a in fig. 2);

a driving circuit for supplying a predetermined drive signal to the display panel (11 in fig. 6); and

a light source device for illuminating the display panel (105 in fig. 6).

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the display taught by Miura around the light source device of Nakabayashi and Osakada.

The motivation for doing so would have been to provide brighter images (Miura; col. 1, lines 22-24).

With respect to claim 14, Nakabayashi, Osakada and Miura disclose, a display according to claim 13 (see above).

Miura further discloses, wherein the display panel is a liquid crystal display panel (4 in fig. 1) having a pair of substrates and a liquid crystal sealed between the pair of substrates (col. 1, lines 13-21).

With respect to claim 15, Nakabayashi, Osakada and Miura disclose, a display according to claim 13 (see above).

Nakabayashi and Osakada fail to disclose that the first and second light emitting regions are arranged in a direction in which the display area is scanned.

Miura further discloses, first and second light-emitting regions are arranged in a direction in which the display area is scanned (fig. 8; note the captions).

It would have been obvious to orient the light guide of Nakabayashi and Osakada as taught by Miura for the benefit of improving picture quality (Miura; col. 5, lines 9-11).

With respect to claim 16, Nakabayashi, Osakada and Miura disclose, a display according to claim 13 (see above).

Neither Nakabayashi nor Osakada expressly disclose, a flashing frequency for alternately driving the first and second light source of the light source device that is equal to a frame frequency of the display panel.

Miura discloses, wherein a flashing frequency for alternatively driving the first and second light source of the light source device (clear from fig. 8, that the light sources are alternated) is equal to a frame frequency of the display panel (col. 5, lines 13-17).

Nakabayashi, Osakada and Miura are analogous art because they are from the same field of endeavor namely, light source devices for display panels.

At the time of the invention it would have been obvious to one of ordinary skill in the art to drive the light sources of Nakabayashi and Osakada with the different frequencies that are taught by Miura.

The motivation for doing so would have been to eliminate trailing (Miura; col. 5, lines 10-12).

15. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakabayashi et al. (US 6,379,017) in view of Osakada et al. (US 5,521,796) in view of Koike et al. (US 5,659,410).

With respect to claim 10, Nakabayashi and Osakada disclose, a light source device according to claim 3 (see above).

Neither Nakabayashi nor Osakada expressly disclose, wherein the first and second light-emitting regions are divided into respective plural parts, which are alternately arranged.

Koike discloses, first (6a/b in fig. 11a) and second (6/a/b in fig. 11a) light emitting regions that are divided into respective plural parts, which are alternately arranged (note the identical shape of the light guide 1, to the applicant's embodiment seen in fig. 19).

Koike, Osakada and Nakabayashi are analogous art because they are all from the same field of endeavor namely, design of light guide plates.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the single wedge-like shape of Nakabayashi and Osakada with the multiple inclination guide taught by Koike.

The motivation for doing so would have been to suppress the reflective appearance and obtain a uniform brightness across the panel (Koike; col. 5, lines 52-57).

16. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakabayashi et al. (US 6,379,017) in view of Osakada et al. (US 5,521,796) in view of Yamada et al. (US 5,704,703).

With respect to claim 12, Nakabayashi and Osakada disclose, a light source device according to claim 3 (see above).

Neither Osakada nor Nakabayashi expressly disclose, arranging a plurality of light guide plates such that they are optically independent of each other.

Yamada discloses, wherein a plurality of light guide plates (72 in fig. 15) are provided such that they are optically independent of each other (col. 13, lines 17-44).

Nakabayashi, Osakada and Yamada are analogous art because they are from the same field of endeavor namely, light source devices for display panels.

At the time of the invention it would have been obvious to one of ordinary skill in the art to arrange the planar light guide plates of Nakabayashi and Osakada in such a manner so that they are optically independent as taught by Yamada.

The motivation for doing so would have been even luminance, sharp directivity and high efficiency (Yamada; col. 13, lines 47-50) .

17. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakabayashi et al. (US 6,379,017) in view of Osakada et al. (US 5,521,796) in view of Miura et al. (US 6,693,619) further in view of Takemoto (US 6,417,833).

With respect to claim 17, Nakabayashi, Osakada and Miura disclose, a display according to claim 16 (see above).

Miura further discloses, causing the first and second light sources to flash at the flashing frequency (clear from fig. 8), and by turning on the first and second light sources to emit light at timing which is set based on a predetermined phase difference of the drive signal to the display panel (see fig. 8, where while 4a is being scanned the light source for 4b is on; after a predetermined phase difference (after 4a has been updated) the light source of 4a is turned on; this process alternates within each frame).

Neither Nakabayashi, Osakada nor Miura disclose, wherein the driving circuit performs multi-scan.

Takemoto discloses, a driving circuit performs multi-scan (col. 1, lines 57-67; col. 4, lines 18-44).

Nakabayashi, Miura, Osakada and Takemoto are all analogous art because they are all from the same field of endeavor namely light source devices for display panels.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the driving circuit of Nakabayashi, Osakada, and Miura with the driving circuit performing multi-scanning as taught by Takemoto.

The motivation for doing so would have been to improve the display quality by eliminating the ripple phenomenon (Takemoto; col. 2, lines 30-34).

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William L. Boddie whose telephone number is (571) 272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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